L. Park
1-17-02
#2 Priority Papers

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Michael COLLINS	
Serial No.	Art Unit:
Filed: concurrently herewith	Examiner:
For: LARYNGEAL MASK ASSEMBLIES	Atty Docket: 0100/0139

SUBMISSION OF PRIORITY DOCUMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Attached hereto please find a certified copy of applicant's patent application No. 0031661.2 filed in Great Britain on December 22, 2000. Applicant requests the benefit of said December 22, 2000 filing date for priority purposes pursuant to the provisions of 35 USC 119.

Respectfully submitted,

Louis Woo, Reg. No. 31,730
Law Offices of Louis Woo
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Phone: (703) 522-8872

Date: Nov 21, 2001

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

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Signed Andrew Gerry

Dated 28 August 2001

Patents Form 1/77

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22 DEC 2000
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Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
South Wales
NP10 8QQ

1. Your reference — 00.LMIM

2. Patent application number
(The Patent Office will fill in this part) — **0031661.2** — 22 DEC 2000

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

SMITHS GROUP PLC
765 FINCHLEY ROAD
LONDON
NW11 8DS

Patents ADP number *(if you know it)* [redacted]

If the applicant is a corporate body, give the country/state of its incorporation — GB

4. Title of the invention

LARYNGEAL MASK ASSEMBLIES

5. Name of your agent *(if you have one)*

J. M. FLINT

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

765 FINCHLEY ROAD
LONDON
NW11 8DS

Patents ADP number *(if you know it)* — 1063288002

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing *(day / month / year)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*

a) any applicant named in part 3 is not an inventor, or
b) there is an inventor who is not named as an applicant, or
c) any named applicant is a corporate body.
See note (d))

YES

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form	
Description	3
Claim(s)	
Abstract	
Drawing(s)	1 & 1

10. If you are also filing any of the following, state how many against each item.

Priority documents	
Translations of priority documents	
Statement of inventorship and right to grant of a patent *(Patents Form 7/77)*	
Request for preliminary examination and search *(Patents Form 9/77)*	
Request for substantive examination *(Patents Form 10/77)*	
Any other documents *(please specify)*	

11. I/We request the grant of a patent on the basis of this application.

Signature J-Flint Date 21/12/00

12. Name and daytime telephone number of person to contact in the United Kingdom J.M. FLINT 020 8457 8220

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Notes

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b) *Write your answers in capital letters using black ink or you may type them.*

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LARYNGEAL MASK ASSEMBLIES

This invention relates to laryngeal mask assemblies and their manufacture

It is common practice to use an airway known as a laryngeal mask for administering anaesthetic and ventilation gases to a patient. These airways comprise a tube with an inflatable mask or cuff at one end, the tube being inserted in the patient's mouth so that one end is located in the hypopharynx and so that the mask forms a seal in this region with the surrounding tissue. Laryngeal masks are described in, for example, US 5355879, US 5305743, US 5297547, US 5282464, GB 2267034, US 5249571, US 5241956, US 5303697, GB 2249959, GB 2111394, EP 448878, US 4995388, GB 2205499, GB 2128561, GB 2298797, GB 2334215, GB2337020, PCT/GB00/03044, PCT/GB00/03045, GB 0002805 and GB 0020274. Laryngeal masks usually comprise a curved, extruded tube, a separate mount member joined at the patient end of the tube and an inflatable cuff attached to the mount member.

Laryngeal masks have several advantages over endotracheal tubes, which are longer and seal with the trachea below the vocal folds. The multiple components and assembly operations needed to make the masks, however, add to their cost.

It is an object of the present invention to provide an alternative laryngeal mask assembly.

According to one aspect of the present invention there is provided a laryngeal mask assembly comprising a tube, a mount at the patient end of the tube, and an annular sealing cuff extending around the patient end of the mount, the tube and mount being moulded together as an integral, single-piece component.

A laryngeal mask assembly according to the present invention will now be described, by way of example, with reference to the accompanying drawing, which is a side elevation view of the assembly.

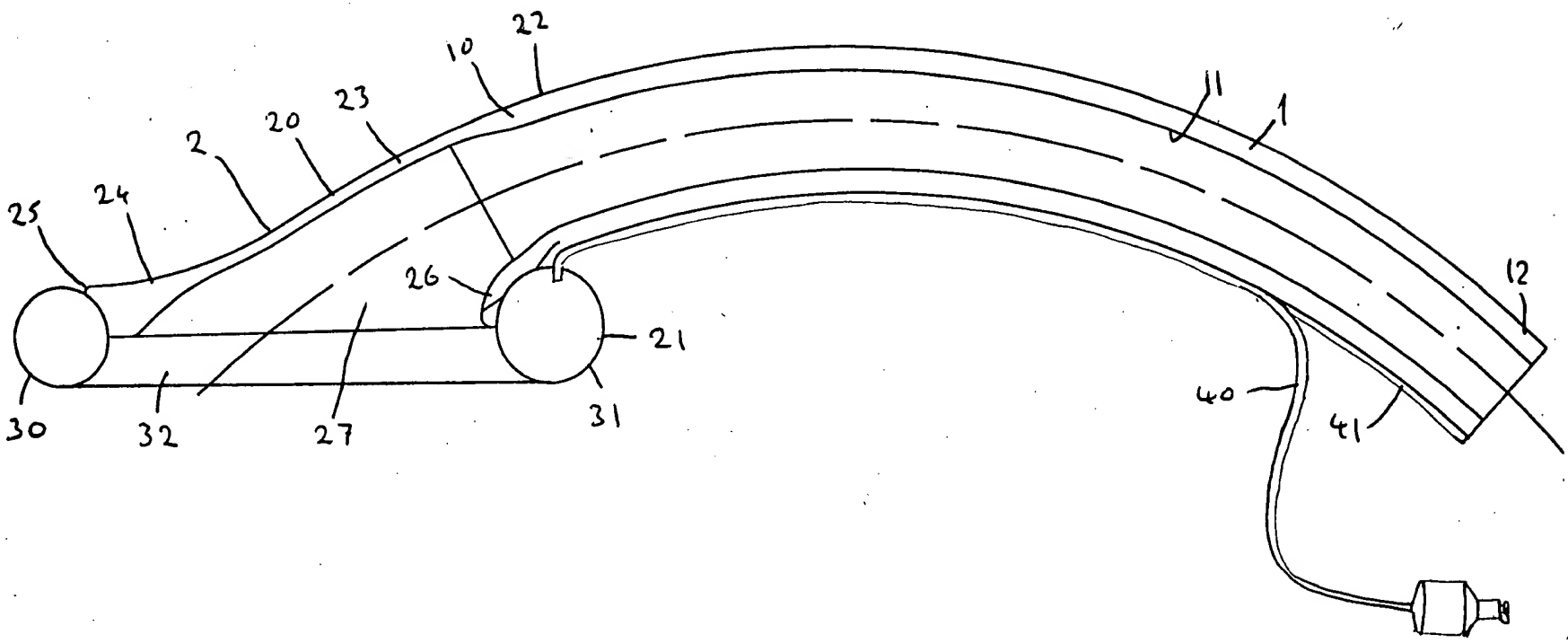
The laryngeal mask assembly comprises a tube 1 and a mask formation 2 at the patient end 10 of the tube.

The tube 1 is of a bendable plastics material, such as PVC and is curved along its length. A bore 11 extends along the tube from its patient end 10 to its rear, machine end 12.

The mask 2 comprises a mount 20 and an inflatable cuff 21. The mount 20 is of a relatively stiff plastics material and is of generally shoe shape. The mount 20 and tube 1 are moulded together, such as by injection moulding, to form an integral, single piece 22. The mount 20 tapers outwardly from its machine end 23 to its patient end 24, which is inclined to the axis of the machine end at an angle of about 25° so that the patient end of the mount has an oval shape with its forward end 25 being more pointed than its rear end 26. The patient end 24 of the mount 20 is inclined to face towards the inner side of the curve of the tube 1. Internally, the mount 20 has a cavity 27 that increases in cross-sectional area along its length, from the machine end.

The cuff 21 is tubular and of a thin flexible plastics material. The cuff 21 is formed into an annulus of the same shape as the patient end 24 of the mount 20 so that it is oval with its forwardly-directed end 30 being more pointed than its rearwardly-directed end 31. The cuff 21 encloses a central region 32 of the same shape as the patient end 24 of the mount 20. The cuff 21 is attached around the patient end 24 of the mount 20 such as by means of an adhesive. The cuff 21 is inflated and deflated by means of an inflation line 40 which is provided by a separate small-bore tube communicating with the interior of the cuff and extending rearwardly along a groove 41 in the outside of the tube. When inflated in position in a patient, the cuff 21 expands to contact patient tissue in the region of the hypopharnyx.

Because the mount and tube are formed in one operation, there are fewer separate components and fewer steps needed to manufacture the assembly. Because the need to bond the mount to the tube is avoided, there is no risk of a faulty bond and there is no need to check a bond. By avoiding a connection between the tube and the mount a smoother external profile can be achieved in the region between the tube and mount, without a step or bump. Moulding the tube and mount together enables the wall thickness or shape to be varied, if desired, at different points along the length of the tube. It is also possible, by moulding, to use different materials, such as polyurethane, which present problems with extrusion.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